Year	Development	Grade	Overview
2011	Button Bonanza	Grades 4-5	This concept development unit develops students understanding of collecting and analyzing data. Students will create various stem and leaf plots to graphically represent data. They will have an opportunity to decide the best method of running their own “Button Boutique” by producing a button bug independently and then in an assembly line. The skills taught using various forms of button data. The students will use information gathered to determine the median and mode of a set in order to describe what is “typical” in a data set. Students will also describe “gaps” in a set of data. During the data analysis throughout the unit, students will be able to determine how data can effect real life decisions.
2011	Drive the Data Derby	Grades 3-4	This unit introduces the concepts of comparing data by designing cars and measuring the distance they travel on a level surface and an inclined track. Students deepen their understanding of creating and interpreting bar graphs. Students use understanding of statistics to determine which average (mean, median, mode) to use in a given situation.
2011	Flicking Football Fun	Grade 4	Students will develop an understanding of the data analysis tools median, mode, and range through a series of data collection activities. Under the theme of football, students will collect and display data through a series of activities using paper footballs. Throughout the unit, they will display data in two types of graphs, stem and leaf plots and line plots. By the end of the unit, students will be able to construct and interpret both types of graphs in order to analyze data for median, mode, and range.
2011	Miss Pettigrew’s Unique Phone Number	Grades 4-5	Miss Pettigrew’s Unique Phone Number teaches fourth and fifth grade students how to construct, interpret and analyze line plots. Students will collect data from a local telephone book to create three line plots. The line plots will be used throughout all lessons to create, interpret, and analyze the data gathered from the investigations. Students will use the information gathered from the investigations to make recommendations for a unique phone number. Students are only providing the first three digits of the telephone number based on statistical analysis. This lesson has been written for teachers without access to technology. However, we have also provided modifications to include technology.
2011	On The Go	Grades 2-3	This unit uses transportation as a theme to help students understand how to collect and display data in tables and bar graphs. The students will gather information in a variety of ways (survey, sorting, and investigations). The students will use the information to create tables and bar graphs. Using the organized information gathered, the students will interpret and make predictions based on the data.

Year	Development	Grade	Overview
2010	Football Fanatics	Grade 3	This unit introduces the concept of line plots. Students learn the parts of a line plot and how to construct a line plot for a set of data. Students also learn how to find the mode, median, and range for data represented on a line plot. The data used during these lessons is both student-generated and teacher-generated. It is expected that students are already familiar with the terms mode, median, and range. During this unit the students will complete several football related activities required to enter a contest to win Super Bowl tickets.
2010	Starting a Restaurant	Grades 2-3	Have you ever wondered what it would be like to start your own restaurant? Well, it can be a difficult process because there is a lot of data to sort through. In this unit, second and third graders will be exposed to using tally charts and bar graphs as a means of organizing and displaying data. The students will be chefs-in-training and work on all aspects of starting a restaurant. They will determine what type of restaurant to start, vote on a name, organize kitchen supplies, keep track of new recipes, and help to create an amazing menu. At the end of the unit students will submit their business proposal to the Head Chef (the teacher) by completing the summative assessment. Prior to starting this unit students should be able to count to 20, sort materials by like attributes, skip count by 2s and 5s, and they should have previous exposure to tally charts. This is an engaging unit that will challenge students to organize data, create displays, and interpret their data in new, fun, and exciting ways!
2010	Super Duper Amusement Park	Grades 4-5	This lesson introduces the concept of line plots as a way to collect, organize, and analyze data. It is expected that students know how to find the mode, median, and range of a set of data. During this lesson the students will construct line plots and find the mode, median, and range from the data on the line plot. They will also be introduced to the vocabulary cluster, gap, and outlier. Students will have the opportunity to analyze data in order to make informed decisions.
2010	Swimming in Data	Grades 5-6	This concept development unit seeks to develop student understanding of two skills crucial to the statistical analysis of data: understanding when to use mean, median, or mode as the correct measure of central tendency and creating stem and leaf plots to graphically represent data. The skills are taught using data from the sport of swimming and within the broader concept of the United States Olympic Swim Team. Spotlighted in the unit are two well-known American Olympic Swimmers, Michael Phelps and Dara Torres. The students will use these swimmers to determine “typical” and “outlier” data within a set. Using this unit to explore the concepts, students are able to create their own data by investigating how large a bubble they can blow (measurement of diameter) and participate in a simulation where they are members of a “class swim team.”

Year	Development	Grade	Overview
2010	The Tale of Mukesh the Monster	**Grade 4**	This lesson introduces the concept of collecting, and analyzing data. It is expected that students will be able to perform an experiment and record the results. They will be able to identify the mode in a set of data. Students will also be able to construct line plots from their data sets and analyze line plots independently from their experiments. Students should be able to perform these skills with up to 20 data points, and with a range less than 10.
2009	Frosty's Ice Cream Parlor	**Grades 4-5**	Students will become owners of an ice cream shop so they can use bar graphs, probability, line plots, and averages to run their shop effectively. They will interpret data of ice cream toppings for their customers.
2009	Passport to the Americas	**Grades 3-5**	In this unit, students will become data explorers. Utilizing data observations, collections, experimentation, representation, and analysis skills, they will navigate through North, Central and South America.
2009	All Aboard! Hop on the Averaging Train	**Grades 4-5**	This unit focuses on calculating mean using the theme of trains. Before teaching this lesson, the students must be familiar with the following topics; mode, median, range, line plots, stem and leaf plots, and measurement in inches. The unit gives the option of using technology if it is available; however, if technology is not available, printable activities and manipulatives are included. Students will be using different graphical representations and methods of analyzing data.

Year	Development	Grade	Overview
2009	Are You a Trash-Talking Litter Bug?	Grades 4-5	The typical American produces 4.5 pounds of trash a day! Americans produce 40% of the trash produced worldwide, yet their population only makes up less than 6% of the Earth's surface! [http://www.earthresourcesrecycling.com/trash_facts] In this unit, the students will explore this topic by collecting, graphing, and analyzing data in order to find out if their school (including teachers and students) are "Trash-Talking Litter Bugs" or "Clean, Green Earth-saving Machines." Students will first review range, median, and mode and learn how to find the mean for a set of data. It is expected that students have experience with data collection and other types of graphing including range, mode, and median. They also need an understanding of decimals. Their focus for the first day will be to look at data on trash produced per person per day in the top trash-producing countries. The following day, the focus is on their teachers! They will graph and analyze data in the form of a line plot to demonstrate the number of worksheets produced in a week and the garbage habits of their teachers. Finally, on the third day, they will collect trash from their own school yard in order to determine the number of recyclable and non-recyclable items. Students will use the information they collect to create a stem-and-leaf plot. By the end of the lesson, students will be able to use facts and data to determine just how "green" their school yard and the school community really is. Students may use calculators throughout this unit.
2009	Dabbling with Dicey Data	Grades 2-3	This unit will help students understand how to collect and display the data in a bar graph. The students will also have a chance to explore probability through the use of spinner and dice games.
2009	Equations in the Park	Grades 3-4	In this unit, students will have an exciting day in Safari Park as they explore algebraic concepts using real-life situations. Students will have understanding of patterns and functions to complete function tables using a one-step operation (+,-, x, ÷ with no remainder) rule. Students will also find the unknown in an equation with one operation to create a board game.
2009	Football Fanatics	Grade 4	Football Fanatics teaches fourth grade students how to construct and interpret line plots. Students will collect data based on the length they can throw a football by measuring to the nearest foot and the number of footballs they can kick through a goal post in 45 seconds. Also, they will measure the circumference of their head to the nearest whole inch to determine their potential helmet size. Line plots containing a title, label, and scale are constructed using the data collected. The line plots will be used throughout all lessons to display, interpret, and analyze the data gathered from the investigations. Creating a line plot of the students' helmet sizes culminates this motivating activity.

Year	Development	Grade	Overview
2009	Passionate About Probability	Grades 4-5	This unit introduces the concept of probability using vocabulary and fractions. It is expected that prior to this unit students will have experience with graphing, tallies and fractions. During this unit, students will explore the probability of events through dice, spinners, and real life experiences.
2009	Potato Possibilities	Grades 5-6	The students will conduct investigations to determine the probability of outcomes of a given event; collect and organize the data from the investigations, and analyze the data to draw conclusions. In Lessons One and Two, students will make predictions, perform experiments, record the outcomes, and analyze the data to draw conclusions. In Lesson Three, students will apply knowledge gained from previous lessons to design a probability experiment or game.
2008	Be Mathletic!	Grades 4-5	In this fun and active unit, students will be encouraged to “Be Mathletic!” Students will encounter statistical concepts by collecting and analyzing data. With engaging athletic activities, students will extend their learning by organizing collected data using bar graphs, line plots, and stem-and-leaf plots.
2008	Challenge of the Chinese Champions	Grades 2-3	In this unit, students will be able to learn about Chinese culture and use graphing activities in order to introduce the statistical concepts of median, mode, and range. Through hands-on activities students will collect, organize, and analyze data in pictographs, bar graphs, and line plots.
2008	Coach for a Day	Grades 4-5	The students will be presented with a scenario in which they are football coaches who need to select a new player for the team. The students will display, analyze, and evaluate data from a simulation activity with fictional football players using tables and bar graphs. In addition, students will evaluate data relating to mean, median, and range to determine which fictional player would be the best to add to their fictional football team.
2008	Elvis the Ailing Elephant	Grades 3-4	This lesson introduces the concepts of mode, median, range, clusters, outliers, and line plots. It is expected that the students have experience with data collection and other types of graphing. During this lesson, each student will become a zookeeper of an elephant at the zoo. He/she will be provided with data on his elephant, which he will share with the group. This data will help the class understand the norms of the elephants at the zoo, which will lead to a solution to help Elvis, the ill elephant, get healthy.

Year	Development	Grade	Overview
2008	Going Green with Graphs	Grade 2	This lesson is for second grade students who have basic computation skills from 0-20. Students need to be able count by 5's and have some prior knowledge of tally charts and bar graphs from their first grade year. Students will be exposed to new vocabulary and introduced to conducting surveys and creating tally charts. Students will create relationships between tally charts and bar graphs by organizing and constructing bar graphs. Students will use the information from the bar graphs to interpret data.
2008	Grace's Campaign	Grades 2-4	In this unit, students will explore various ways to organize data using bar graphs and stem and leaf plots. Students will analyze data using median and mode. The students will discuss the electoral process and the characteristics of a good leader.
2008	Graphing Our Way to the Olympics	Grade 3	Students will have the opportunity to skip count, compare, interpret, and classify data about the Olympics. They will interpret data and create bar graphs, line graphs, and pictographs. Students will acquire knowledge and interesting facts on the Olympics.
2008	Party Time!	Grade 4	In this unit students have the chance to create a great birthday bash but not before they collect, organize, and display planning data in tally charts and along line plots. They will also use statistical concepts of mean, median, mode and range to analyze the data. And to help form predictions for a successful celebration, students will apply basic concepts of probability. Afterwards, it's "Party Time!"
2008	Vote the Facts	Grades 4-5	Students will have fun as they learn some interesting facts and trivia about the former presidents of the United States of America. Because this is a statistics lesson, the data will be displayed and interpreted. Yes, we will be looking for the trends of our forefathers!
2008	What are the Chances?	Grade 3	The students will develop an understanding of probability concepts by conducting investigations that help them identify the likelihood of possible outcomes. The lessons provide a variety of ways for the students to explore their understanding. In the first lesson, students make choices about which spinner will most likely give a desired outcome. The second lesson gives students an opportunity to record results from a trial onto a frequency table and create a graph using the data. The last lesson includes an opportunity to practice subtraction facts while collecting data to determine the fairness of the game.

Year	Development	Grade	Overview
2007	Are You Ready to Call the Guiness Book of Records?	Grades 3-4	Collecting, displaying, and interpreting data has become a part of life in our fast paced technological world. In the following lessons students will be responsible for gathering and displaying data in a line plot. They will find two measures of central tendency according to the data. Students will work as a whole class, in groups, pairs, and individually.
2007	Bar Graphing With Weather	Grades 2-3	This unit should be used to review tally charts and bar graphs with second and third grade students. Students will collect data in order to make tally charts of data, identify the parts of a bar graph, and be able to create and analyze their bar graph data. Teaching methods include: teacher modeling, guided practice, collaborative groupings, and hands on activities that will lead students to independent application of the skills.
2007	Chocolate Festival	Grades 4-5	In this tasty unit, students will be exposed to the statistical concepts of mean, median, mode, and range. Though a variety of hands-on experiments involving chocolate, students will collect, analyze, and organize data into line plots, bar graphs, and stem and leaf plots. Students will learn how to design their own surveys to represent their data in graph form.
2007	Favorites Fun with Bar Graphs	Grades 2-3	Display of data is an essential part of statistics because when information is displayed in graph form, it is easier to read and interpret. Through data collection, students will collect, organize, display, analyze, or interpret data to make decisions, predictions, and make comparisons. During this unit, students will have the opportunity to create, read, interpret and identify the parts of bar graphs.
2007	I Drink, You Drink, We All Drink Water	Grade 5	Data Analysis is a process used to gather information by asking formulated questions. Data analysis allows you to collect, organize, evaluate, and display your answers in a relevant form. Through various activities and games the opportunity to develop, engage, and apply real life experiences will create flexible, engaged math thinkers. The students will complete a taste test, complete surveys, and do experiments on water.
2007	Let's Get Physical	Grades 3-5	Organizing data on different types of graphs can help students to easily analyze the information that they have collected. Using line plots and stem and leaf plots are two ways to show numerical data. These lessons will help students understand how to create and interpret both types of graphs and also how to choose the more appropriate visual representation for a particular data set.

Year	Development	Grade	Overview
2007	Line Plots: Frogs in Flight	Grade 5	Frogs in Flight is intended to teach fifth grade students how to construct and interpret line plots. Students collect data on how far their origami frogs jump by measuring to the nearest inch. A line plot containing a title, label, and scale is constructed based on the frog jumping data. The line plot is used to display, interpret and analyze the data gathered from the investigation. Creating a fun display of frogs, graphs, and data culminates the activity.
2007	Probability: How Much Can I Earn?	Grades 4-6	The following lessons will provide time for your students to investigate how relative size of an outcome affects its probability. Your students take time to construct and evaluate line plots, line graphs while they ponder the idea of earning an allowance.
2006	Blast Off	Grades 4-5	With this project, the students become aerospace engineers, designing and building rockets. This motivating unit uses Balloon Rockets to collect, organize, and display data in a stem and leaf plot and scatter plots. The unit challenges students to find the range, median, and mode.
2006	Data By the Sea	Grade 2	This lesson is designed to give students hands-on practice and review of tally marks with gate counting. Students will also be involved in creating and interpreting pictographs. Students will be actively engaged in this “fish” theme that integrates mathematics, literature, and art.
2006	Decimals in the Dugout (Place Value)	Grades 4-5	It’s time to play ball with decimals and hit a home run out of Place Value Park! Students will explore the concepts of part to whole relationships, place value, and decimals while engaged in baseball-related activities. This learning unit focuses on place value to the decimal thousandths. Prior to beginning these activities, students should have a firm grasp of whole number place value through millions. The students will use base-ten blocks, tangrams and other manipulatives in order to gain an understanding of place value with decimals. Students will also have an opportunity to explore comparing decimals with extension activities. So let’s root, root, root for the decimal home team!
2006	Graphing Healthy Habits	Grades 3-4	Students have already learned some basic graphing skills in second grade. They will be reintroduced to the pictograph, which shows the relationships between objects, using symbols. This unit will compare data using the circle graph and the bar graph, and develop graphs that record good health habits.

Year	Development	Grade	Overview
2006	Hats Off To You	Grades 2-3	Through the use of a hat theme in a literature connection, students will explore the collection, display, and interpretation of data with tally charts, concrete bar graphs, and pictographs. Students will work in partners, small groups, and independently, to communicate mathematical ideas and practice using mathematical vocabulary. Students will develop their understanding of concepts progressing from a concrete to a representational level.
2006	Health Craze	Grade 4	The students will gather, organize, and interpret data in order to determine which snack foods are healthy choices. Students will create line plots to display their data and utilize data analysis vocabulary to describe and interpret their data.
2006	Lollipop Lovers Delight - Integrating Science, Math and Writing	Grade 5	Students participate in an experiment with Tootsie Pops to determine the average number of licks it takes to reach the chocolate center in the Tootsie Pop. They will learn how to perform the experiment using the Scientific Method, collecting and displaying data with bar graphs, analyzing and comparing results of other groups. When constructing bar graphs the students will include the necessary components and choosing an appropriate scale. As a culminating activity students will correspond with the Tootsie Pop Corporation about these results.
2006	Money Matters	Grades 2-3	The students will learn to sort and graph coins so they can better understand that the number of coins is different than the value of coins. They will initially practice sorting the coins to make sure they can differentiate each of them. They will then learn to make a bar graph and count the amount of each type of coin. The students will make a second bar graph to reflect the value of the money a little boy has. The students will have to use skip counting to determine the value of the money the child has. They will recognize that the more coins do not necessarily mean more money.
2006	Probability CHEX©plorations	Grades 3-5	Vocabulary for probability will be introduced: certain, likely, unlikely, and impossible. Students will use these words by experimenting with data and scenarios. Students will enjoy their math experiences as they are creating a recipe, manipulating proportions, and enjoying a sweet treat.
2006	Sweet Prediction Factory	Grades 4-5	The main focus of this unit is to give students experience making good predictions using a variety of methodology relating to the novel *Charlie and the Chocolate Factory* by Roald Dahl. Through simulations, students will explore probability, sampling and data analysis.

Year	Development	Grade	Overview
2005	Building Brilliant Bar Graphs	Grades 2-3	This unit is written for second and third grade students who have some basic background knowledge of graphing. Students will be introduced to the parts of a bar graph, organizing and comparing data by creating a number of different bar graphs including a double bar graph. Students will also be introduced to scale and intervals on a bar graph. Students will acquire these skills through teacher modeling, guided practice, and independent practical application of collecting and organizing data through taste testing activities and games.
2005	Build It! Graph It!	Grade 2	This introductory unit will focus on second grade data collection and graphing. Students will explore surveys, tally charts, bar graphs and pictographs through examining student interests. Teamwork and individual work will be used through a variety of activities. This unit includes three lessons and a summative assessment. Some students may need additional lessons and practice to master the concepts.
2005	Carnival Craze: What are Your Chances?	Grades 4-5	Through a carnival theme, the students will develop the concept of probability by using mathematical methods to determine possible outcomes of independent events. Activities include: Target Toss to determine a fair game, Clown Races to determine possible outcomes, and Delightful Dessert to determine combinations.
2005	Creepy Crawling Through Line Plots and Graphs	Grades 1-2	Students will collect, organize, display, and interpret data. Students will be able to interpret data contained in a line plot and bar graph using a variety of categories and intervals. Students will be able to use probability terms to interpret data to make decisions or predictions.
2005	Fun With Football	Grades 4-6	These lessons will encompass collecting and displaying data with line plots and stem and leaf plots. Students will also understand basic probability concepts including quantifying the likelihood of an event. In addition, students will analyze data by identifying the mean, median, mode, and range.
2005	Something's Fishy - Probability	Grades 3-5	This unit emphasizes that the theory of probability is an important branch of mathematics with many practical applications in the physical, medical, biological, and social sciences. Since students have many misconceptions about probability situations, developing an understanding of this theory is essential to understanding weather reports, medical findings, political doings and the state lotteries.

Year	Development	Grade	Overview
2005	Summer Vacation Combinations	Grades 4-5	Students will explore the concept of making combinations. They will develop their understanding of combinations by utilizing the following four strategies; creating a list, a drawing, a table, or a tree diagram. Throughout the lessons, students will incorporate personal information in order to construct their combinations using the four different strategies. Finally, students will demonstrate their understanding of the strategies by completing the summative assessment.
2005	The Three D's of Environmental Data - Deciphering, Dissecting, and Displaying	Grades 3-6	Students will know how to collect, display, and analyze data by experimenting with “growing animals,” measuring the distance of origami creatures, predicting a census flower count of a meadow, and observing and recording the growth of planted seeds. The students will understand the value of graphs and will be able to draw conclusion and make generalizations in the form of BCR’s and ECR’s. The content focus is Environmental Science. While learning to analyze and display data, the students will learn about habitats, plants, and animals.
2004	Bear Business	Grade 2	The students will explore the concept of probability. Students will do a variety of activities that involves the students in making predictions, collecting data, using data to make decisions, and learning that some outcomes are more likely than others.The first lesson begins with the student’s idea of chance and what is most likely to happen and what is least likely to happen with the use of dice. The use of problem-solving strategies will help the students in identifying possible outcomes that happen while rolling the dice and selecting items from a grab bag. At the completion of the lessons, students will be able to describe the likelihood of such events by using the vocabulary terms associated with probability. Students will be assessed on their knowledge of probability through tests, word search games and journal entries.
2004	Carnival Capers-Fun with Probability	Grade 3	Step right up to a classroom of carnival fun! Students will enjoy exploring concepts of probability while engaging in carnival-themed games. They will describe the likelihood of outcomes/events, create organized lists to determine all possible combinations, and assign numerical value to express probability. Through cooperative learning, students will discover how useful and relevant probability is in real life.
2004	Collecting, Organizing and Displaying Data / "NEAT FEET"	Grades 3-4	These lessons will encompass collecting and displaying data with line plots and line graphs. In addition, children will analyze data by identifying the mean, median, mode, range, and outlier. When constructing line graphs the students will include the necessary components and choose an appropriate scale. All of the aforementioned is conclusive in this three-day data analysis mini-unit.

Year	Development	Grade	Overview
2004	High Flying Ads: Choosing the Appropriate Graph to Represent a set of Data	Grade 5	Students will show that they know what type of graph can be used to represent a certain set of data. Students will be given a consumer product to research and advertise. They will investigate five sets of data, some of which they will collect themselves through hands-on activities. Then they will organize the information into graphs they deem appropriate for the type of data. These graphs should optimally represent different aspects of the product so that the consumer will be convinced to purchase the product. The students will be assessed on the graphs they chose to represent their data, and their justifications for their choices. They will present their findings in an advertisement to the class, with a name for the product and slogans to encourage consumers to buy the toy.
2004	Mardi Gras Mania	Grades 2-3	The students will gather, organize, and interpret data in order to make informed decisions based on outcomes relating to a Mardi Gras Carnival. They will be able to recognize, describe, and use the vocabulary terms relating to a line plot. They will also construct their own line plots and tally charts.
2004	Pioneering Data	Grade 5	The main focus of this unit is for the student to analyze and interpret data organized and derived from a few day-to-day experiences of the 19th century American child thus integrating math and social studies curricula.
2004	Presidential Probability	Grade 3	With the presidential election coming up in November, 2004, we are incorporating the scientific method of inquiry in order to have the students pose a question, answer data, and make a prediction based on current and historical data.
2004	The Sky's The Limit: A Data Analysis and Graphing Unit	Grade 5	This is a data analysis and graphing unit about structures and things that are tall. This unit is linked to both science and social studies through the information about mountains, domes, skyscrapers, and bridges.
2004	Traveling Through Line Plots	Grades 4-5	The students will use their knowledge of graphs and central tendencies to explore and extend their understanding of line plots, range, median, mode, and mean. In order to help their local shoe factory, they will generate a graph of shoe sizes and decide what the most popular size is using the appropriate central tendency of 9 and 10 year olds.
2003	Compare and Share	Grade 3	This is a capability, comparison study in which sports balls of varied sizes will be used to count bounce frequency as they are dropped from a table 3ft. in height. Following student predictions, outcomes will be analyzed and data recorded on bar graphs.

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2003	Fast Food Discovery	Grade 4	The students will use problem solving strategies and their understanding of data to determine the class's favorite fast food restaurant, sandwich, side order and drink. They will collect, organize and display their data on a frequency table and bar graph. Students will solve a nutrition problem and create their own nutritional glyph.
2003	Gone Graphing	Grades 4-5	These lessons will be implemented during the Data Analysis and Statistics unit. After studying and creating line plots and bar graphs, students will be introduced to line graphs. They will utilize various sets of data tables in order to create line graphs that include all of the necessary criteria. Students will also practice making appropriate scales that correspond to specific sets of data. Finally, students will use their knowledge of line graphs to analyze and interpret double line graphs.
2003	Let the Games Begin: Olympic Trials in Data Analysis	Grade 5	The students will conduct three days of Olympic Games. They will display the data in either line plots or stem and leaf plots. On the final day the students will write newspaper articles interpreting the results of the games. The winning team will receive a gold medal at a closing ceremony.
2003	Researching the Rainforest	Grades 3-4	Students take a mock journey through the rainforest and explore various ways to display and analyze data. Through investigation they learn the value of displaying data in graphic form. Students examine elements of graphs and relationships between tables and graphs. Once data is displayed students are challenged to draw conclusions. Probability is integrated into this unit as a method to predict data based on sampling the data.
2003	Tycoon Toons	Grade 2	In this unit, students try to win a contest by creating the best new cartoon. This is a project-based unit that integrates Language Arts and has students conducting surveys and polls and organizing the data into tally tables, pictographs, and bar graphs.
2002	Bubble-Maniacs	Grades 4-6	In this unit, students will collect data on the size of soap bubbles. Using different variables such as mystery ingredients and varying soap brands, students will collect data on bubbles and make line plots, bar graphs, and box plots as well as calculate measures of central tendency. Students will be required to write a paragraph explaining their choice for the best large bubble blowing solution.

Year	Development	Grade	Overview
2002	If the World Were Our Classroom	**Grades 3-5**	Using the picture book, *If the World Were a Village* by David J. Smith, students will gather similar research from their classroom to create their own book. Students will use the activities to practice data collection and graphing skills. Final graphs will display statistics and an analysis of results taken from two different classrooms.
2002	Jumping Jamboree!	**Grades 3-5**	Students will apply their knowledge of time, problem solving, and teamwork in a jumping experiment. This experiment is a jumping competition involving a jump rope and a hula-hoop. The students will work together as teams to determine which piece of equipment is best suited for jumping. They will apply what they have learned by composing a letter to the principal explaining the data they collected.
2002	Mystery Location	**Grades 4-5**	Students will learn about the seasons and how the tilt of the Earth affects the amount of daylight a location on the Earth will receive on any day. The students will use sunrise and sunset information to graph the amount of daylight for Washington, DC on a periodic basis. Using their graphs, the students will make observations about the amount of daylight Washington, DC receives during each season of the year. After understanding how to construct the Washington, DC daylight hours graph, groups of students are given similar data for an unknown location. The students construct a graph of daylight hours for their unknown location. The students analyze the graphs to obtain clues about the location (i.e., Northern or Southern Hemisphere, near the Equator, etc.) Then the teacher provides the list of locations with their latitude/longitudes. The students compare graphs and clues to determine the possible locations that match their graphs.
2002	Our Carnival Adventure	**Grades 1-3**	Students will collect and organize data in order to create bar graphs. With the information they recorded, they will create an advertisement for the local carnival. After creating their advertisement, they will write a letter to the carnival owner persuading him to use their advertisement.
2001	Designer Stamps	**Grades 3-5**	In this unit the students will conduct a survey to identify the most popular illustrations pictured on stamps and identify the trend of postage stamp costs. They will collect and analyze findings and display data using a variety of methods.

Year	Development	Grade	Overview
2001	Doggie Day Care	Grades 2-3	In this unit, the students will demonstrate a fundamental knowledge of graphing, analyzing classroom data, and using that knowledge to solve problems. After several data collecting activities, the students will be asked to use what they have graphed to design a Doggie Day Care that will meet the needs of the most popular pet, the dog. The student will then write a friendly letter to the President encouraging him to build a Doggie Day Care for his two dogs.
2001	Fall Festival	Grades 4-5	This unit focuses on problem solving, data analysis, basic number sense, and written communications. Students are responsible for choosing the activities for the Fall Festival. The students will compare/contrast the cost of the activities from the previous year's Fall Festival. The students will determine seven activities that they think should be part of the Fall Festival. Then the students will design a survey for helping to select activities most desired by the rest of the student body. The students will create a frequency chart, line plot, and bar graph for every class representing the most popular choice of activities. Finally, using the interpreted data, the students will write a letter to the principal explaining which activities should be considered for the festival and why.
2001	Record Breaking Flight	Grades 4-5	In this unit students will create model airplanes using different variables, such as model type and paper. The unit involves data analysis through the use of various tables and graphs. It also involves a language arts aspect as students will be required to write a business letter.
2001	State Fair Statistics	Grades 2-3	This unit utilizes a simulation of State Fair activities to teach methods of data collection and record keeping. Students will learn graphing techniques including: pictograph, bar graph, tally sheet, outcome wheel, stem and leaf plot, and line plot.
2000	Bouncing High	Grades 4-6	Students will apply their knowledge of measuring, problem solving, and teamwork to design a new and better bouncing ball. They will work in small groups and utilize their skills to create a size for maximum bouncing and fun. They will graph the rebound bounce of their ball and compare the results with the rebound bounce of other balls.

Year	Development	Grade	Overview
2000	Cipher Sleuths	Grades 4-6	This unit immerses fourth-, fifth-, and sixth-grade students into several data analysis activities involving the deciphering of secret codes. Students will analyze the frequency of the letters of the alphabet in a reading passage, graph the data, compare their data to another source, and apply their findings to the solution of several transposition and substitution ciphers. They also will be introduced to vocabulary associated with codes.
2000	Feel the Beat	Grades 3-5	This learning unit involves gathering, plotting, and analyzing various data. The students will practice these skills both cooperatively and individually. Students will be able to gather data by taking their own pulses and to display it using a stem-and-leaf plot. Students also will analyze and interpret the data.
2000	Field Day Facts	Grades 3-5	One common end-of-year activity in school is Field Day. This unit highlights eight common Field Day activities. Students will use the activities to practice data collection and graphing skills. Final graphs will display statistics from each event for each grade level in the school.
2000	Out of This World!	Grades 2-3	This learning unit integrates the disciplines of science, language arts, and mathematics by engaging second- and third-grade students in measurement and graphing activities based on the theme of planets. Students will use the skills of data collection, organization, representation, interpretation, and inferencing as they pertain to information about each of the nine planets in our Solar System.
1999	Adventure Land	Grades 4-6	Students will explore the basic concepts of data analysis in this unit as they gather data concerning amusement park rides. This learning unit involves collecting, organizing, classifying, and displaying data. The students will organize and classify collected data in graphic form.
1999	Book Fair Fascination	Grades 3-5	Students will be enlisted to provide information for the teacher to purchase books for the classroom at the annual Book Fair. Students will collect and analyze data to find the most popular books for their class library.
1999	Carnival Capers!!	Grades 3-4	In Carnival Capers, the students will collect, organize, display, and analyze data. They will be presented with a real life situation in which they will be opening three different booths at a carnival. This unit consists of graphing and probability activities.
1999	It's a Jungle Out There!	Grades 1-3	This learning activity involves identifying, predicting, sorting, counting, adding, organizing, graphing, analyzing, and displaying data. This data will be used to demonstrate student understanding of data analysis concepts.

Year	Development	Grade	Overview
1999	Maryland Is for Crabs!	Grades 4-5	Students will be involved in planning a class crab feast. They will be introduced to correlations utilizing scatter plots. This unit will encompass the skills of line plots, measurement, and glyphs.
1999	Our Grand Old Flags	Grades 3-5	This learning unit integrates the disciplines of social studies (economics and history) and mathematics (data analysis). Students will collect and organize data about our American flag. As a part of the introduction to this learning unit, the teacher may choose to activate prior knowledge by asking such questions, as: Has our American flag always looked as it does now? or When and where do you see the American flag displayed?
1999	Pick Me!	Grade 5	This probability unit will allow students to collect, organize, analyze, and interpret data in a meaningful context while offering classroom teachers a class management technique. Students will investigate the probability that their chosen numbers will be picked, thus allowing them to participate in classroom activities. The unit will culminate in an activity requiring each student to select a number between one and thirty and justify his/her choice.
1999	Play That Tune!	Grades 4-5	Students will be involved in analyzing data (the length of popular songs). They will construct a line plot in order to determine the average length of a popular song.
1999	Spin To Win	Grades 4-5	In this performance-based assessment, students will explore probability in an authentic situation involving the design of a new game. Students will design a spinner and a game board, and write a business letter evaluating the fairness of the game.
1999	"The Unfair Fair"	Grades 3-6	In a carnival setting, students investigate three games to determine if the games are “fair” or “unfair” and use data to justify their reasoning.
1998	Balloons, Balloons, Flying High	Grades 3-5	This thematic learning unit focusing on balloons will allow students to collect, organize, analyze, interpret data in a real-world context. Additionally, students will use concepts of probability to predict event outcomes, comparing theoretical and experimental probability.
1998	Fascinating Friction!	Grades 3-5	This unit involves collecting, recording, organizing, and displaying data. Students will use this data to analyze possible scientific and mathematical outcomes in an experiment. Students will make predictions, interpret results, and draw conclusions. This physical science unit involves the collection of data on various surfaces with more or less friction.

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1998	Freaky Frogs	Grades 3-4	This probability unit involves cooperative learning with the emphasis on predicting, collecting, displaying, and analyzing data. Students will work in cooperative groups investigating the probability of frogs landing on a certain color in a spinner. Culminating/assessment activity consists of a writing prompt in the form of a paragraph.
1998	Gingerbread Glyphs and Graphs	Grade 3	In this unit, students will use gingerbread men to explore the concepts of data collection and analysis. This will be achieved through the construction of stem and leaf plots, glyphs, and pictographs.
1998	If Humpty Only Knew	Grades 3-5	This learning unit involves four activities related to the real-life, open-ended decision making associated with the renovation of a community park. Students will gather, organize, analyze, and interpret data, simulate possible outcomes, consider economic and safety factors, and use problem solving and logical reasoning to develop individual sets of plans for renovating Stats Park.
1998	Let's Go to the Movies!	Grades 3-5	This learning unit involves collecting, organizing, interpreting, analyzing, and displaying data. The students will use the collected data to interpret, analyze, and solve an authentic situation. The students will demonstrate the basic concepts of data analysis.
1998	Spring Extravaganza	Grades 3-5	This unit involves students collecting, organizing, interpreting, and analyzing data. They will complete a survey to collect data and utilize geometrical shapes to find the area and perimeter of the shapes. The students also will be measuring, designing, and labeling polygons. They will be working in cooperative groups to complete these activities with the exception of the independent writing assignment.
1998	What's Your Poison?	Grades 3-4	On an expedition to the rainforest, students will gather and organize data on the population of frogs. Students will also experiment with probability. This learning unit, which can be integrated into a social studies or science curriculum, involves collecting, organizing, displaying, and analyzing data.
1998	Zonker Mania	Grades 4-5	Students will be presented with a real-life situation. They will collect, organize, interpret, analyze, and display data. The students will demonstrate the basic concepts of probability.

Year	Development	Grade	Overview
1997	Choosy Chips	Grades 3-4	In this unit, students will estimate, count, and gather nutritional information on several brands of chocolate chip cookies. This data will be displayed using bar graphs, line plots, and a circle-ray glyph. Students will share and analyze data to determine which brand of cookies is the best. As a conclusion, the students will write a letter persuading the test coordinator which brand to use.
1997	Food for Thought	Grades 4-5	This unit involves collecting, organizing, and displaying data. Students use the data collected to analyze a real-life problem, identify possible solutions, and formulate a plan of action. This unit involves the collection of data on lunch menu choices for possible implementation in the school's cafeteria.
1997	Get the Message	Grades 4-5	This learning unit involves collecting, organizing, interpreting, analyzing, and displaying data. Students will utilize the collected data to analyze a real-life dilemma. The students will demonstrate the basic concepts of probability.
1997	Going to Orlando!	Grades 5-7	Students plan a trip from Baltimore, Maryland to Orlando, Florida, driving on Interstate 95 to visit Grandma. They calculate for each of the six states, the mileage driven and the amount of time needed to drive on Interstate 95 using graphic organizers and maps. Students multiply, divide, and add decimals to determine the total amount of money necessary for gas and food expenses. Their calculations are written in a Student Resource Booklet (SRB) using fractions, decimals, ratios, percents, and circle graphs. Finally, the students research and write (writing to inform) a "Plan of Action for Joe" for this younger sibling including the above information and interesting facts on at least two of the six states along Interstate 95.
1997	Hard as a Rock	Grades 4-5	This unit involves collecting, organizing, displaying, and analyzing data related to rock type properties. Students collect data through a series of standard geological procedures often performed for identification purposes and in the selection of building materials.
1997	Pizza Party	Grades 2-3	In this unit, students will collect, organize, interpret, and analyze data through the use of surveys, graphs, and glyphs. The various activities will be performance based and involve cooperative learning strategies. Students also will make connections to the real-world.
1997	Souper Soup	Grades 4-6	This lesson involves students in a variety of activities centering around beans and their use in preparing soup. Students will observe, discuss, and compute in cooperative groups as they complete activities in language arts, science, and math. At the conclusion, students will enjoy eating their soup and persuade the school cafeteria manager to offer soup on her menu.

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1997	Student Entrepreneurs	Grades 2-5	Your class is considering opening a school store from which students can buy school supplies. Students will collect, analyze, and interpret data in a variety of formats to determine the feasibility of this enterprise. This real-life unit actively involves students in the decision making process, using problem solving, reasoning, and communication. Connections to other curriculum areas are integrated throughout.
1997	The Perfect Picnic	Grades 3-5	In cooperative learning groups, students will engage in a variety of activities. Students will collect, organize, display, and analyze data. The class will use information to make predictions and generate graphs and glyphs. Through the use of a real-life problem, students can apply data analysis and mathematical skills to understand the importance of its application.
1997	Up Beat	Grades 3-4	This unit involves collecting, organizing, and comparing data. Students gather data to learn about how their pulmonary system functions in relationship to other students and under different conditions. Students use a line plot (histogram) to analyze and compare resting pulse rates and pulse rates after activity.
1997	Welcome to Wall $treet	Grades 4-6	This unit involves collecting, organizing, and displaying data. Students will become familiar with the everyday workings of the stock market enabling them to make decisions and draw conclusions regarding the use of their money in the stock market.
1996	Discovering the World of Graphs	Grades 4-5	These activities were developed to encourage creativity and discovery of concepts. In cooperative groups, students will engage in a variety of hands-on activities to organize and interpret data displayed in a graph format. Math journals will be incorporated daily. Each day's lesson should be assessed through kid-watching, anecdotal records, and the child's overall performance.
1996	Field Day Fundraiser	Grades 3-4	This lesson involves students in real-life problem-solving and decision-making situations. They will collect, analyze, and interpret data to determine which souvenir to purchase for Field Day. Faced with the problem of having to raise money to purchase the souvenir, the students will calculate information from a chocolate chip cookie recipe and determine the amount of cookies needed to raise enough money to purchase the souvenirs As a final activity, the students will write a letter using mathematical reasoning to persuade their principal to allow them to sell chocolate chip cookies during lunch time.

Year	Development	Grade	Overview
1996	From Big to Small - We're Playing Basketball	Grades 4-6	Using the standard class configuration and cooperative groups, students will observe, discuss, collect, interpret, and generate data about basketball stats in general and the free throw shot in particular. This class will use information to make predictions and generate charts, plots, and graphs. Students will use a journal to log predictions, findings, conclusions, and recommendations.
1996	Let the Games Begin	Grades 4-5	Students will participate in "Olympic" games within the classroom, and create a glyph flag for their team using criteria provided. Students will work cooperatively in groups to estimate time, distance, volume, and area and then determine actual data through participation in the games. Data will be recorded on a self-correcting score sheet and students will use this data to individually construct a double bar graph comparing the actual and estimated data.
1996	Marathon Man	Grades 5-6	This task will enable students to predict, estimate, and accurately measure using a variety of activities and tools. The students will participate in a marathon of mathematical activities to see how closely their estimation compares to their actual measurements. They will become familiar with metric units by using their estimations and measuring. Upon completion of the activities, the students will use statistics and graphing to compare their individual results to the class results.
1996	Math Olympics	Grades 3-4	This learning unit integrates social studies and math concepts. The students will work in jigsaw cooperative learning groups to compete in four different math games. At the conclusion, the students will determine the winners, as well as the most appropriate data analysis displays.
1996	Paper, Paper Everywhere!	Grades 3-4	This unit involves collecting, organizing, and displaying data. Students use the data collected to analyze a real-life problem, identify possible solutions, and formulate a plan of action. This unit involves the collection of classroom trash and paper and designing a plan to conserve paper.
1996	Snack Mix	Grades 3-5	Students will investigate a snack mix by comparing the means of the different ingredients and graphing the results. The students will create a recipe for their own snack mix which must include at least 3-5 ingredients and weigh 100 grams. The students will develop an appropriate three-dimensional package to market their snack mix product. Students will use production cost and desired profit to decide on a price for the snack mix.

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1996	Take Me Out to the Ballgame	Grades 4-7	This learning unit covers many of the real-life decisions and calculations that are made when planning a trip. In this unit, the trip will be a cross-country tour of major league ballparks. Students will use a wide variety of skills in determining the many expenses and potential routes of travel. It is an academic and athletic journey which rolls through math, english and geography, giving the students a memorable experience that will stay with them forever.
1996	The Great Pumpkin Adventure	Grades 3-5	Each cooperative group will use mathematical knowledge to formulate clues which will require another group to use computation skills, collect data, analyze, and solve real-life problems.
1996	Vroom! Vroom! Start Your Engines!!!	Grade 3	Students will perform a variety of tasks to collect and analyze data. They will construct a bar graph and use a Venn diagram. As a conclusion, the students will demonstrate their knowledge by expressing their findings in written form.
1996	Win with the News	Grades 2-4	This activity invites students to participate in a newspaper contest. The skills involved are used to develop and assess functional life skills. Social studies, science, and language arts are integrated in this math based activity. Students explore math concepts by investigating the front page, sports, and weather sections of the newspaper.
1996	World Play Days	Grades 3-5	This unit is a week-long series of multicultural games and activities. The activities actively engage students in applying previously learned concepts in measurement, geometry, decimals, and statistics.
1995	And The Winner Is...	Grades 5-6	In this unit, students will develop and construct a survey to be administered to their peers. Throughout the activity, they will collect and interpret data and represent this data in a graph of their choice. As a conclusion, the students will present their findings in small groups to the class. Then, the teacher will initiate a discussion of the role of statistics and mathematics in our culture and society.
1995	Are You Game? A Lesson Connecting Fractions and Probability	Grades 5-6	This activity integrates probability with fractions and applies it to analyzing games of chance. Students will examine various commercially produced games for fairness. Students will design a spinner and then create a game which effectively utilizes their spinner.

Year	Development	Grade	Overview
1995	Bar Graph Kit	Grades 1-6	Students will make shoe boxes into personal felt boards with manipulatives. The graph kit is useful in a variety of activities related to language arts, science, art, and math. In this unit, students are introduced to bar graphs. They use felt boards and squares to construct graphs related to data they collect. When clean-up time comes, the students stack the kits in one of two piles in response to the “Question of the Day.” These piles then become a bar graph of responses for the whole class. This lesson works best with groups of eight or more.
1995	Bay Watch	Grades 3-5	This activity is an integrated math, science, and language art activity. Students will take an environmental approach to applying mathematics by first estimating and then weighing softshell crabs. Students will then brainstorm environmental factors that affect the life cycle of crabs, then write an explanatory paragraph supporting bay and wildlife preservation.
1995	Calculating Crustaceans	Grades 3	This is a whole language unit. The children will be introduced to crustaceans progressing from a fictional to a real-life situation. The students will be measuring, predicting, estimating, sorting, classifying, and writing creative time-order paragraphs.
1995	Commercials: Are They Worth Your Time?	Grades 3-5	Using computation skills, data collection, and cooperative groups, students will observe, discuss, and collect data about television commercials in an organized format. The class then uses that information to make predictions and generate charts and graphs for the purpose of comparison. Students will use a journal to log data and write predictions, findings and conclusions. Final assessment will include a fictitious account, in the student’s journal, using the data to justify how often, when, and during which time periods they would advertise a product.
1995	Crazy About Candy Bars	Grades 5-6	Candy is an appealing topic for students of all ages. In this activity, fourth and fifth-grade students gather information on various candy bars by reading nutrition fact labels, measuring with metric rulers, computing volume, and calculating the cost per gram. Once collected, this data is organized and displayed in student-constructed glyphs which are then interpreted. This activity can be extended to provide the teacher an opportunity to teach the concepts of measurement, decimals, computation, and statistics. If these concepts have been previously taught, this activity provides an excellent opportunity to review and apply them.

Year	Development	Grade	Overview
1995	Flying Data	Grades 3-5	This activity allows students, working in pairs, to conduct investigation through scientific method and data analysis. Students will perform a variety of tasks to collect and analyze data. They will construct a bar graph, develop a stem and leaf plot, and use a Venn diagram. As a conclusion, students will demonstrate their knowledge by expressing their findings in written form.
1995	Hold On To Your Pennies!	Grades 4-6	Students will explore various graphic-displaying techniques through hands-on activities by using pennies. They will collect, organize, display, interpret, and analyze a set of data. These activities will integrate geometry with the use of area and language arts through reading and writing activities.
1995	Losing Our Students To Fat Grams	Grades 5-6	This lesson examines the relationship between calories and fat content found in everyday foods. The students will be expected to compute percentage of fat grams from calories, as well as plan a well-balanced meal. They must take into account the Food Guide Pyramid and national guidelines for fat percentages.
1995	Mean, Median, or Mode -- Which Is the Best Measure ...?	Grades 3-5	Students will work in groups to arrange, analyze, and interpret data given on the Washington Redskin's scores for the football seasons 1990 through 1994. Students will construct a stem and leaf plot. In addition, students will use the mean, median, and mode to determine the best measure of central tendency for each year of data provided. Using this information, they will construct a bar graph. Students will then summarize the data and predict the average score for the 1995 football season. Students will share this information both orally and in written form.
1995	Planning A Field Day	Grades 3-5	The activities in this lesson will expose students to a practical application of gathering data, developing and interpreting a graph, and measuring elapsed time through the planning and scheduling of events for a grade level field day. Students will work independently, cooperatively in small groups, and as a whole class during this learning unit.
1995	Reach The Beach	Grades 3-5	This interdisciplinary math, social studies, and science unit focuses on real world activities with mathematical connections, using hands-on experiences, pencil and paper, calculator work, allowing for both creative expression and evaluation during problem solving.
1995	The Big Chill	Grades 3-5	In cooperative learning groups, students will use their knowledge of insulation to construct a device to keep an ice cube from melting. They will collect data and draw conclusions about their findings.